Sub A1

WHAT IS CLAIMED IS:

1. A process for producing a semiconductor substrate comprising steps of:
forming a nonporous monocrystalline semiconductor layer on a porous layer of a first substrate having the porous layer;
bonding the nonporous monocrystalline layer onto a second substrate;
separating the bonded substrates at the porous layer;
removing the porous layer on the second substrate; and
removing the porous layer constituting the first substrate.

2. A process for producing a semiconductor substrate, comprising steps of:
forming a nonporous monocrystalline semiconductor layer on a porous layer of a first substrate having the porous layer;
bonding the nonporous monocrystalline layer onto a second substrate with interposition of an insulative layer;
separating the bonded substrates at the porous layer;
removing the porous layer on the second substrate; and
removing the porous layer constituting the first substrate.

3. The process according to claim 1 or 2,

wherein the porous layer is formed from silicon.

4. The process according to claim 1 or 2, wherein on the separated first substrate, after removal of the porous layer therefrom, a new porous layer is formed, and is employed repeatedly as the first substrate in the forming step of the nonporous monocrystalline semiconductor layer and subsequent steps.

5. The process according to claim 1 or 2, wherein the nonporous crystalline semiconductor layer is an Si layer.

6. The process according to claim 1 or 2, wherein the nonporous crystalline semiconductor layer is a compound semiconductor layer.

7. The process according to claim 1 or 2, wherein the first substrate is constituted from Si.

8. The process according to claim 1 or 2, wherein the second substrate is light-transmissive.

9. The process according to claim 1 or 2, wherein the step of removing the porous layer is conducted by etching.

10. The process according to claim 1 or 2, wherein the step of removing the porous layer is conducted by selective grinding of the porous layer by employing the nonporous monocrystalline semiconductor layer as a stopper.

11. The process according to claim 1 or 2, wherein the step of separating the bonded substrates at the porous layer is conducted by at least one of methods of application of a compression force to the substrate in a direction perpendicular to the bonding face of the substrate, application of a pulling force to the substrate in a direction perpendicular to the bonding face of the substrate, and application of a shear stress to the bonding face.

12. The process according to claim 2, wherein the insulative layer is formed on at least one of the nonporous monocrystalline layer and the surface of the second substrate.

13. The process according to claim 12, wherein the insulative layer is selected from thermal oxidation films, deposited SiO_2 films, and deposited Si_3N_4 films.

14. The process according to claim 1 or 2,

wherein the step of bonding is conducted one or combination of anode coupling, compression, and heat treatment.

15. The process according to claim 1 or 2, wherein the porous layer is formed by anodization.

16. The process according to claim 1 or 2, wherein the anodization is conducted in an HF solution.

17. The process according to claim 1 or 2, wherein the step of separating the substrates at the porous layer is conducted by application of a wave energy.

18. The process according to claim 1 or 2, wherein the step of separating the substrates at the porous layer is conducted by inserting a separation member from an edge face of the porous layer thereinto.

19 The process according to claim 1 or 2, wherein the step of separating the substrates at the porous layer is conducted by expansion energy of a material impregnated into the porous layer.

20. The process according to claim 1 or 2, wherein the step of separating the substrates at the

porous layer is conducted by selective etching at the edge face of the wafer.

21. The process according to claim 1 or 2, wherein the porosity of the porous layer ranges from 10 to 80 %.